COLORADO DEPARTMENT OF HEALTH
HAZARDOUS MATERIALS WASTE MANAGEMENT DIVISION
REVIEW AND COMMENTS ON
DRAFT TREATABILITY STUDIES PLAN

Executive Summary

A two phase treatability studies plan is unacceptable given the time frame and scheduling of the IAG. Innovative and emerging technologies must be screened in the final treatability studies plan DOE's Office of Technology Assessment, Dr. Gloria Patten has several technologies under assessment All of these technologies should at be screened for applicability to Rocky Flats.

Figure 1-1 page 1-4

The block diagram flowchart is unacceptable as shown in Figure 1-1.

Section 3.0 Program Objectives page 3-1

The purpose of conducting treatability studies is not to generate data required to evaluate and screen technologies. The purpose of conducting treatability studies is to generate data when there is not enough data available to evaluate and screen technologies This slight change in word order forces treatability studies to be performed on almost every technology It is not necessary to reinvent the wheel to assess the applicability of every available technology

The list of specific objectives listed on page 3-2 needs to be checked against the parameters listed in the IAG Statement of Work Section XI Treatability Studies Plan

Section 5 0 Technical Approach page 5-1

The elements of the Program as stated are not independent The Treatability Studies Plan" sorts all technologies into two types One type could be designated 'Enough information available to determine relevancy to Rocky Flats The second type could be designated, Not enough information to evaluate relevancy to Rocky Flats, needs Treatability Study .

Only the technologies which need Treatability Studies need to have Treatability Study Work Plans and the subsequent Treatability Study Reports after the treatability study is performed.

Figure 5-1 Technology Selection and Screening Process page 5-2

Enclosed is a copy of the analogous flow chart from the EPA Guidance document as cited in the transmittal letter. This guidance document is listed in the bibliography, and it remains a puzzle why it was not used in writing this document It is not necessary to have complete site characterization data to identify applicable technologies By not doing a comprehensive literature search before deciding whether enough data is available almost every technology must have a treatability study performed on it

Section 5 1 2 ARAR Identification

It is not necessary to spend alot of time determing ARAR's since they will be site specific and probably change between now and the time the site is actually remediated IRIS, the risk assessment data base provides health based levels which are updated regularly The use of IRIS for this and other site-wide documents where some information on ARAR's is useful is recommended

Section 5 2 2 Practical Technologies and Applications page 5-17
Each of the 26 technologies for water, and 16 technologies for soil should have been evaluated on the basis of the six points listed in the IAG. The six points listed are.

1. Information on performance
2. Relative Costs
3. Applicability
4. Removal Efficiencies
5. Operation and Maintenance Requirements
6. Implementation of technology

Section 5 2 2 1 Water Technologies page 5-18.
Combination contaminants in a media should have been addressed in a more specific manner in this section. For example, on page 4-8, the discussion of contaminants present at 881 Hillside lists radionuclides, chromium, iron, and three volatile chlorinated organics present in the soil What technology or combination of technologies could be used to remove all three types of contaminants and what order should the technologies be performed in to minimize cost and maximize removal efficiencies? There are chemical simulation process modeling systems available which given specific input and output concentrations would produce information on all six of the decision parameters listed in the IAG It is not necessary to perform treatability studies , on every technology when information is available in modeling programs or in a comprehensive literature search, in a much more timely fashion than 36 months

Section 5 2 2 2 Soil Technologies page 5-24
The factual content on soil technologies presented in these three pages could be summarized in the following sentence Solidification/stablization, soil washing and physical separation technology may be applied to soil contaminated with radionuclides and inorganics, organics may be removed by vacuum extraction, incineration, thermal desorption, or biological treatments in a slurry reactor, land farming, or in situ, an expensive method for treating radionuclides in soil is vitrification It is difficult to believe that none of these technologies has been used at any other site on earth and no data is available on effectiveness, cost etc

Appendix C Technology Data Sheets
Section 2.1 1 Determining the Need for Treatability Studies page 7 in the EPA 540/2-89/058 Guide for Conducting Treatability Studies Under CERCLA December 1989 states, 'After information on the physical and chemical characteristics of the waste has been performed Technical information resources, including information from reports and guidance documents, electronic data bases, and experienced EPA staff are reviewed, and available performance and cost information on each technology is obtained and evaluated with respect to the waste type and site conditions present Each of the technology data sheets in this appendix is an initial step in performing the analysis required to screen each technology If this is the format chosen by DOE for analyzing each technology, all of the six points listed in the IAG must be addressed point by point In addition to the three parts currently included, a description of the process, applications, and advantages and disadvantages currently reviewed for each process, the technology data sheets must address point by point, performance, relative costs, applicability, removal efficiencies, operation and maintenance requirements, and implementability For example, statements such as, The vapor phase treatment unit may be costly can hardly be construed as an analysis of relative cost Nor

can the statement, High removal efficiences for removal of these compounds is also reported by the American Water Works Association, be construed as a scientific technical analysis of process efficiency.

Summary

The Final Treatability Studies Plan must contain technical, specific, scientific documented information on each of the six points listed in the IAG for each of the 26 processes listed as "practical and conventional" in addition to a minimum of at least five or six innovative technologies currently not reviewed in the Draft Treatability Studies Plan. All of the technologies must be rescreened after a through literature search so that all of the technologies do not need to undergo treatability studies The technologies which have been determined to need treatability studies must have specific treatability study workplans outlined. The workplan should include a technology specific experimental procedure, not the content outline of an experimental procedure copied from the treatability study guidance The workplan must include a data goal, for example a solubility, partition coefficient, reaction rate constants, etc. There are ten parameters for a treatability study workplan outlined in the IAG. For each technology chosen for a treatability study, a treatability study workplan which addresses all ten of the parameters listed in the IAG must be included in the final treatability study The Division does not intend to approve EPA's Guide for Conducting Treatability Studies Under CERCLA 540/2-89/053 as the Final Site Wide Treatability Studies Plan for Rocky Flats document